



Best Management Practices For Fluid Minerals – Part 4

REDUCING IMPACTS FROM OIL AND GAS CONSTRUCTION, OPERATIONS, AND RECLAMATION

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Use BMPs to Enhance: Construction, Operations, & Reclamation

Typical BMPs May Include:

- Pre-Permitting Meetings with the Operator
- Proper Construction Techniques
- Intermediate Reclamation of Producing Well Pads
- Maintenance of Production Facilities
- Full Site Reclamation at the Final Abandonment Stage

Meet With The Operator Before the Permit Application is Filed



The Operator & Surface Management Agency should meet **prior** to the submission of the Application for Permit to Drill (APD) to plan for development, identify issues & resources to be protected, discuss BMPs, and work out a smooth permitting process.

Construction

In some circumstances you can mow the well location, park on the grass, and need only excavate topsoil for rig and pit placement.

Mowing reduces disturbance & reclamation costs, and speeds site recovery.



Construction

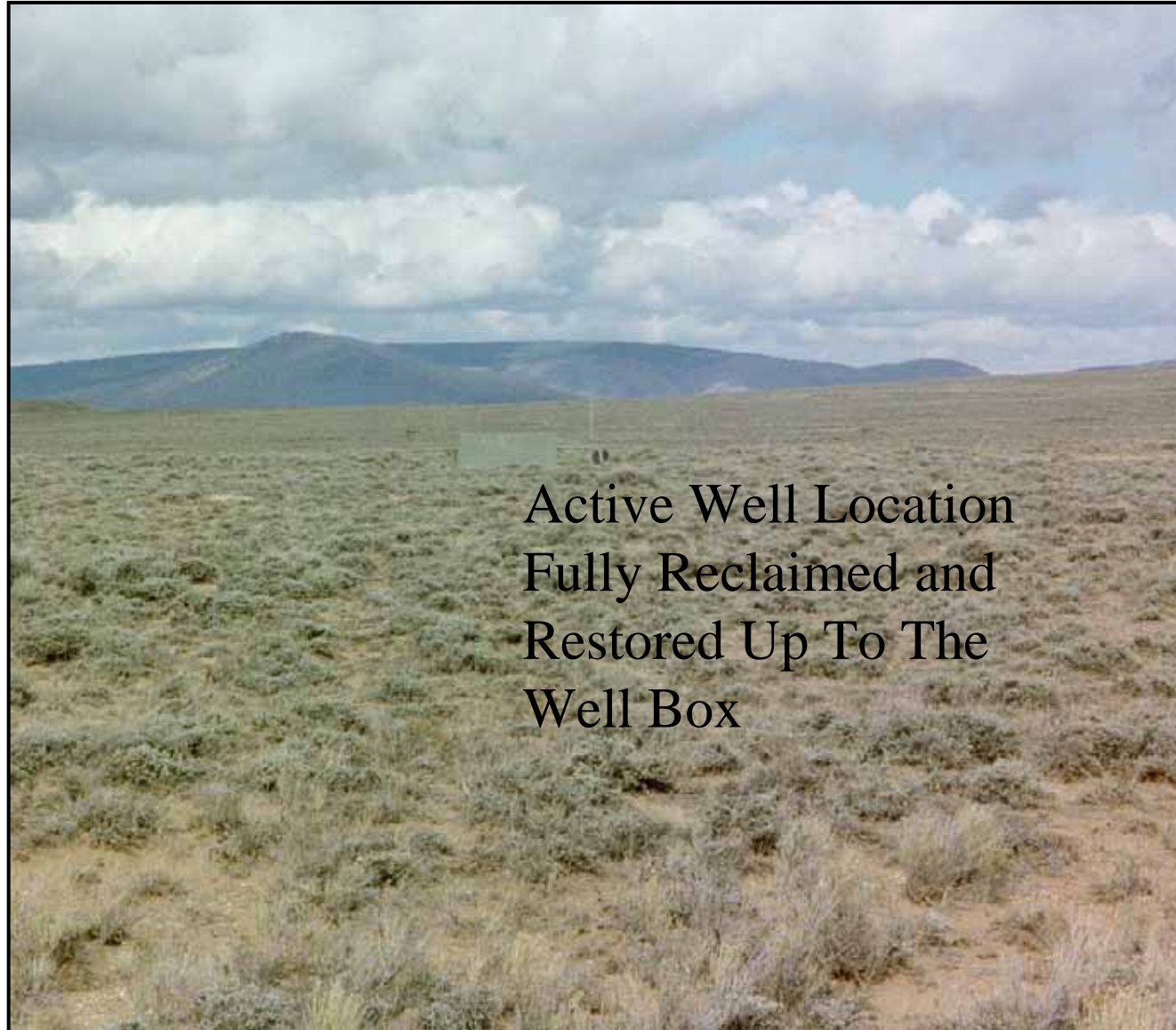
- Reuse an old road or pad if possible, but only if it is in a safe and environmentally sound location.
- If you create a new road, recontour and revegetate the old road it replaces.



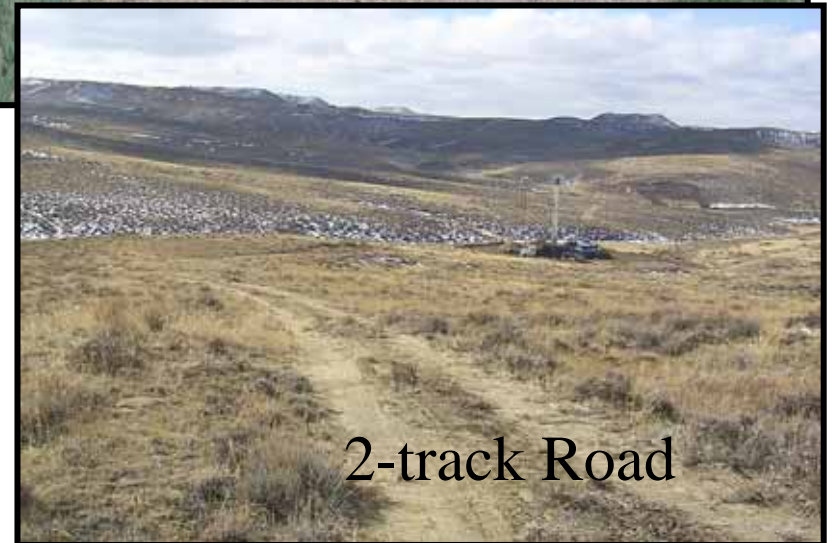
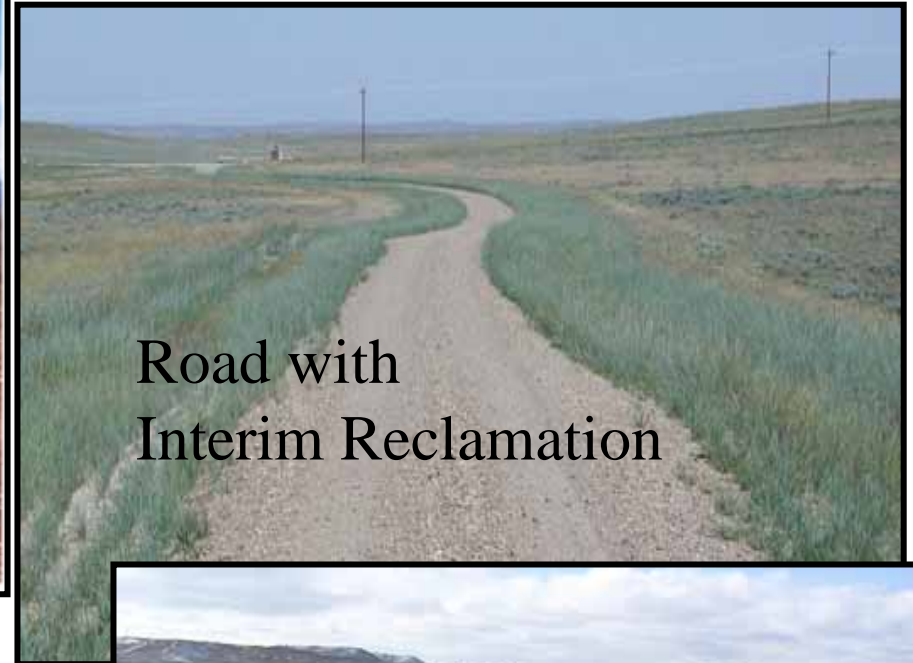
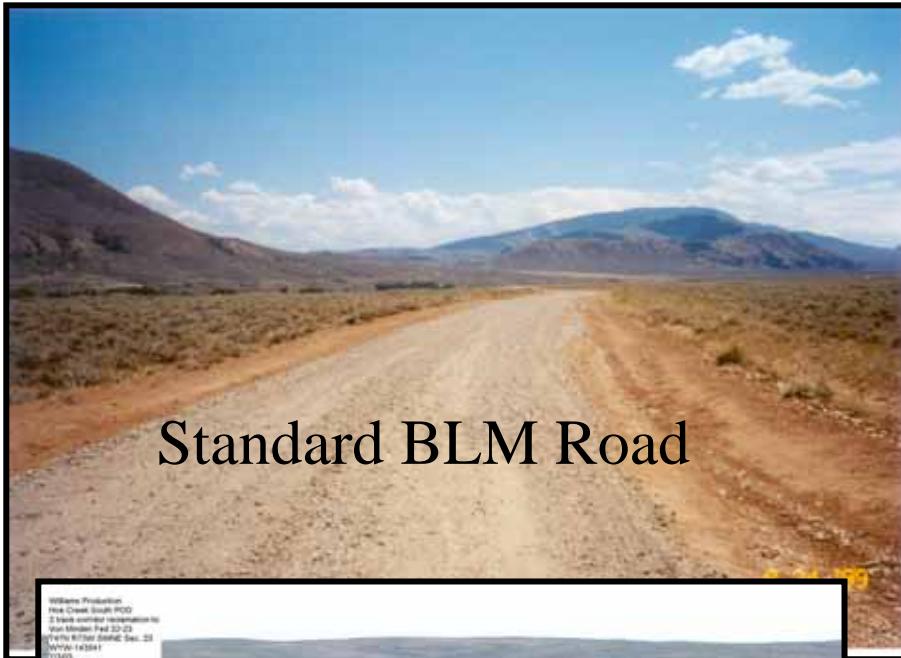
Duplicate roads.
The old road was never properly reclaimed.

Interim Reclamation

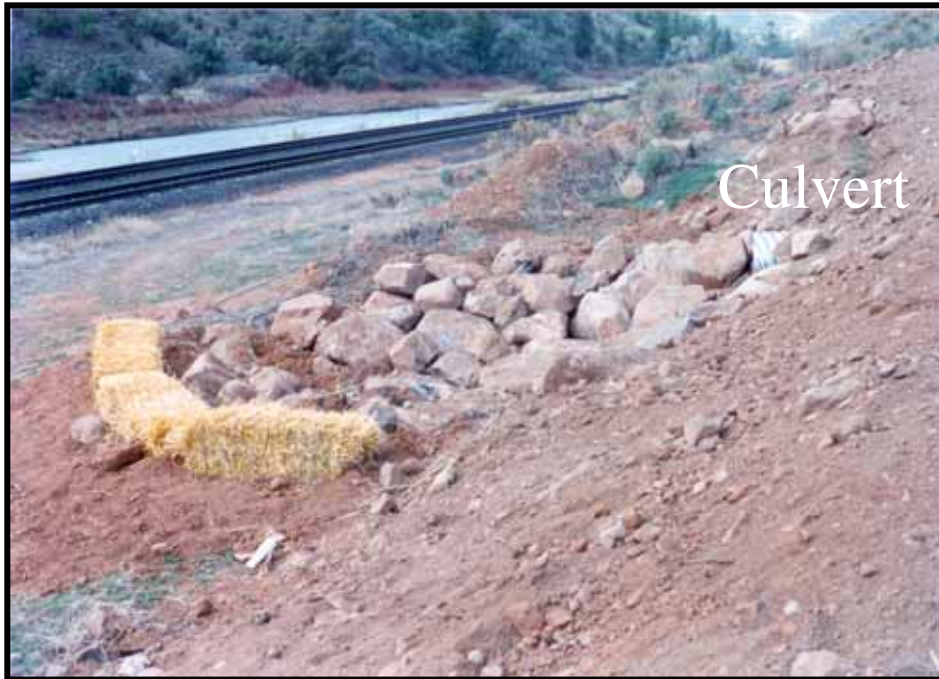
Why take several acres per well out of forage and habitat production during the 7 to 70 year life of the well?



Minimize Roads



Erosion: Culvert Installation

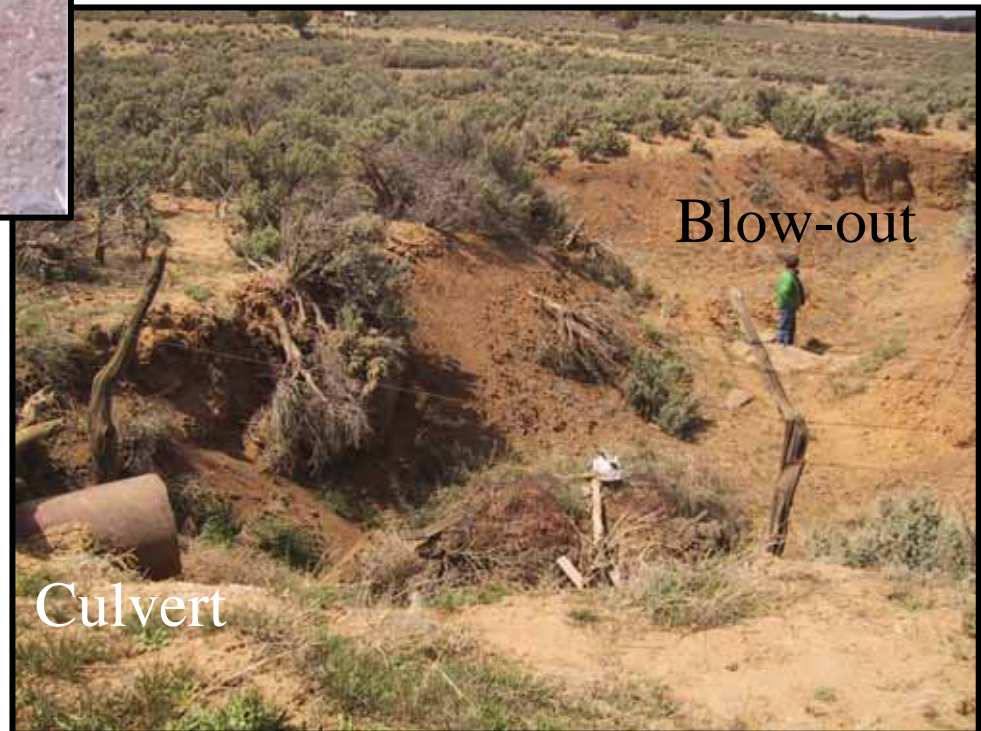


With Culvert Outlet
Erosion Control

← Use this

To help prevent this →

Without Culvert
Outlet Erosion Control



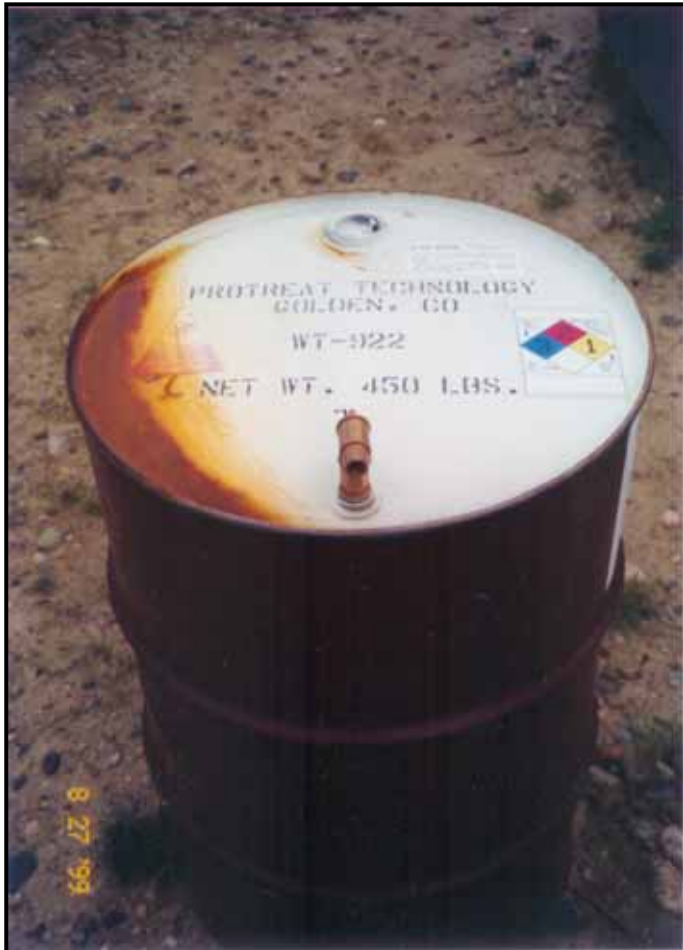
Production

Remote monitoring reduces
vehicle, personnel, and road maintenance costs.



Storage of Hazardous Chemicals

Improper Storage



Chemicals should be placed within secondary containment in case of a spill or bullet hole.



Bioremediation of Oil Field Wastes and Spills



On-site Bioremediation destroys oil field wastes & spills and reduces costs and potential liability associated with landfill disposal.

Composting oily tank bottoms with wood chips.



Housekeeping

Remove Trash, Junk, and Other Materials not in Current Use

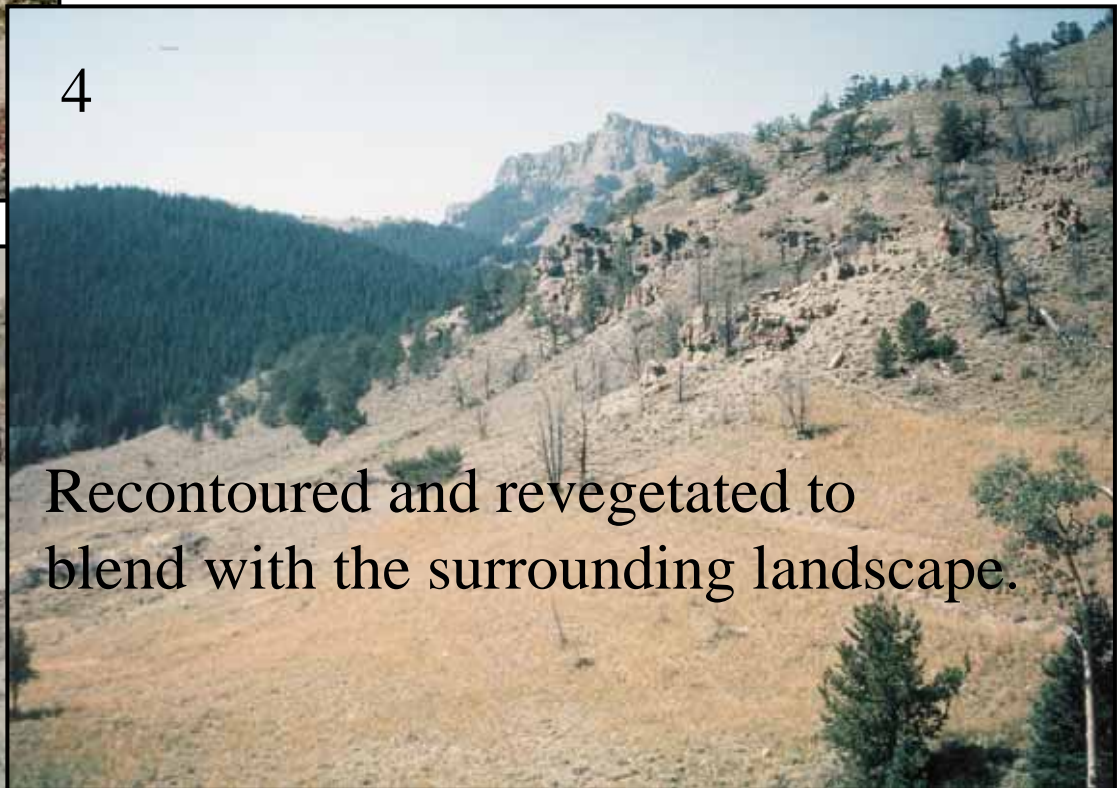


It's the Pits.... and it is unacceptable.



If you must have a pit, keep it free of oil and **use netting**.
All pits must be closely monitored and maintained.
Consider using closed tanks, instead.

From Construction to Final Reclamation



Recontouring Roads

Recontour unneeded roads back to the original contour.



Leave the surface rough to trap seed, moisture, and to deter vehicle use.

Road & Pipeline Reclamation



Before



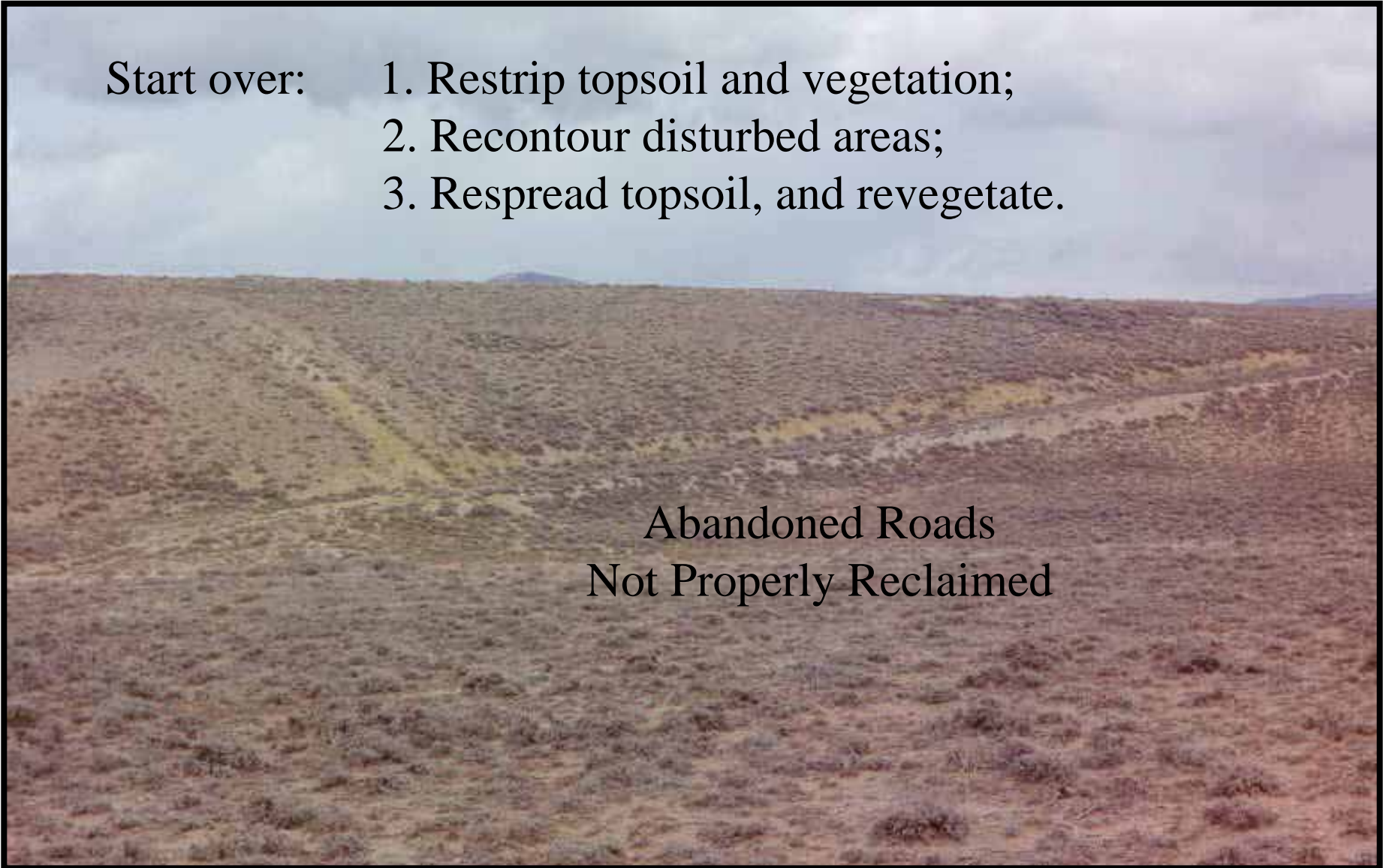
After

Unfinished Road Reclamation

Start over:

1. Restrip topsoil and vegetation;
2. Recontour disturbed areas;
3. Respread topsoil, and revegetate.

Abandoned Roads
Not Properly Reclaimed



Reclamation Monitoring

Compliance Monitoring: Did the Operator do what was agreed to?

Effectiveness Monitoring: Did we all agree to the right thing?
Was it successful?



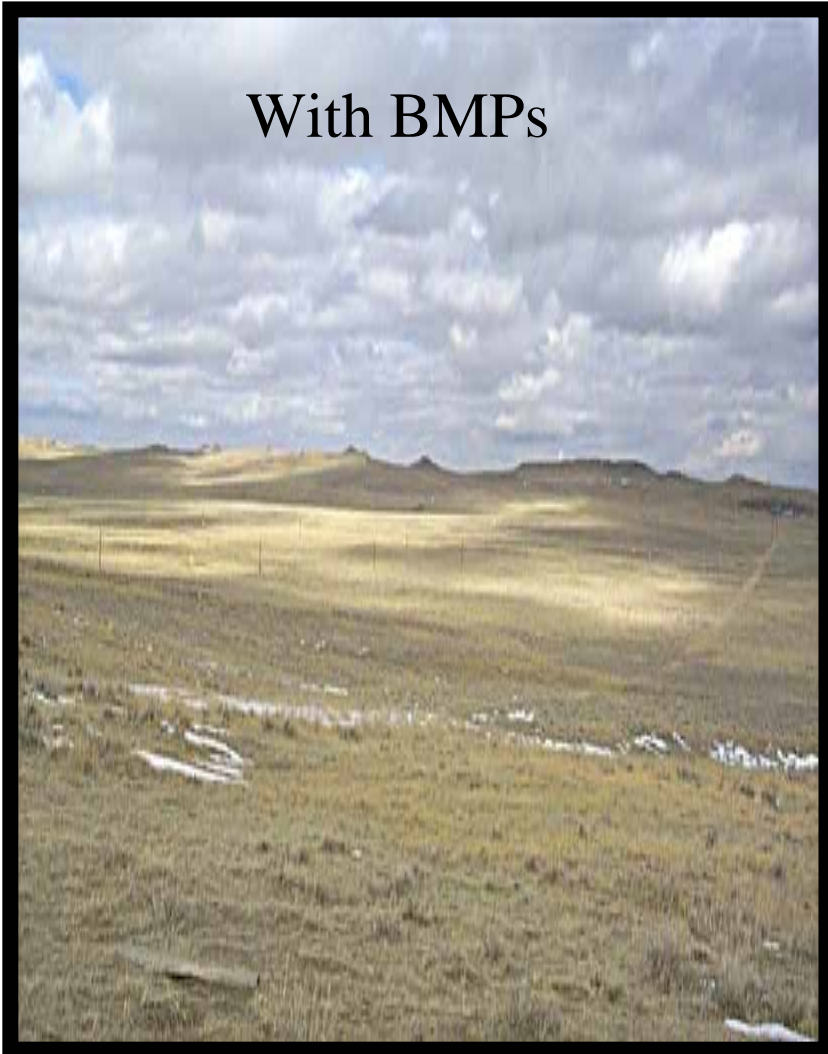
In Summary: Why BMPs?

- BLM has a history of successful BMP use in many offices.
- BMPs protect Wildlife Habitat, Forage, Water, Scenery...
- All Land Use Plans contain Land Health Standards.
- Many BMPs have a minimal cost or result in a cost savings.
- BMP cost is a very small portion of the cost of drilling a well.
- BMPs can help to allay Public concerns and result in fewer: Permit delays caused by Protests, Appeals, & Litigation.
- BMPs can help protect the habitat of many species, including the Sage-grouse.
- It is the Right Thing to Do!



Where Do We Go From Here?

With BMPs



Without BMPs

